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GOLDEN HINTS
FOR
YOUNG MARINERS

BY CAPTAIN JAMES SEDGWICK

AUTHOR OF "TRUE PRINCIPLES OF THE LAW OF STORMS."

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BY CAPTAIN JAMES SEDGWICK,

AUTHOR OF "TRUE PRINCIPLES OF THE LAW OF STORMS."

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TO THE MERCANTILE MARINE OF GREAT BRITAIN.

THE very flattering manner in which my attempt to simplify the beautiful theory expounded by Sir Wm. Reid, on the Laws of Storms, was received by my nautical brethren, induces me to hope that my present endeavour to write something useful for the guidance of young officers in the merchant-service, when placed in trying positions, will meet with similar approval.

There is much in this little work that may appear trivial to the experienced seaman, and his opinion may be different on many of the subjects treated upon. Still I hope that a great many of my nautical brethren will be disposed to consider the present work, as one likely to prove useful to the rising generation.

My previous work on the Law of Storms was dedicated to the royal navy, as well as to the mercantile marine of this country. But in a work of this kind it would be presumption in me to imagine that I could give any hints likely to be useful to the naval officer, where the rules and regulations of his service are such that almost all emergencies are provided for ; at the same time I am not without hope that the young Middy, ambitious to get charge of the quarter-deck as an officer, may find some useful hints in this little work, which, with other resources at his command, he will be able to improve upon.

To the young officers of the merchant-service my present work

I believe will prove useful, although they may learn from after-experience to differ from some of the rules I have laid down. In publishing these directions for the hour of danger, I have done so with the feeling of having had frequent opportunities of putting them to the test, during a life that has been spent at sea, and I trust that the experience I have gained may serve to diminish the difficulties that they will have to contend with.

It is a general idea with people on shore that any boy will make a sailor; this is not the case; the qualifications requisite to make a good seaman are many and various. It does not follow that because a man is a good mathematician, he must necessarily make a good officer; the seaman's art is practical and mechanical; and if he has a sufficient knowledge of navigation to be able, with the aid of instruments and books, to ascertain his position on the broad Atlantic as well as the Astronomer-royal himself could do, surely, if his inclinations are not mathematically inclined, he may be considered quite as competent, if not more so, than the man who has always got his head filled with some abstract idea on mathematics.

The mathematician is intended for the study; he is the seaman's friend, and teaches him how to apply short and easy rules, deduced from long calculations in spherical trigonometry, which enables the mariner to conduct his vessel with perfect safety from port to port; the other part of the profession is longer in being learned, and requires practice combined with quick ideas. In fact, there are many who go to sea all their lives, and never learn it; these are the men who haul the head-sails down, or try to get the foreyard round when the ship is aback, and when caught in a squall make futile efforts to get a topgallant studding-sail in, with the helm hard up, and spanker set; to such this little work may prove useful, they will probably pay more attention when informed of their deficiencies in print, than when spoken to on the subject by their superior officers.

Unfortunately, the merchant-service is too often made a resort for the destitute; the boy, whose parents are unable to make anything of him on shore, is sent to sea; the man who finds it impossible to obtain a living on shore, doffs the skirted coat, and is soon placed by the crimp on shipboard; these are the lubbers! and the law favours them. I have seen the clearest cases of incompetency made out, but the magistrate (a landsman), unable to understand the matter, leans to the party who apparently requires his commiseration, and the heading in ships' articles thus becomes a dead letter. Surely common sense must suggest that a naval officer, or an officer from the merchant-service, would be more fitted to fill the magistrate's chair on such occasions.

Within the last fifteen years there have been no less than three Merchant-Seaman's Acts in force, the last one a little better than the others; but the whole law required might be contained in a very small space: what is wanted is discipline, obedience, and civility to officers; on the other hand, tyranny should be punished. It is found expedient for the better maintenance of order in the good City of London to send the poor cabman to prison for ten days if he is only insolent to a gentleman; surely, in a confined place like shipboard, the same power should be given to the captain, instead of the absurd notion of stopping two days' pay. Seamen in general think that shipmasters have no authority to confine them, and frequently when an attempt is made to confine an unruly character, scenes occur that never would, if the right to do so was made more explicit, and two years' imprisonment given to those who attempted to intimidate the master in the performance of his duty.

I can hardly hope that these opinions from an humble individual like myself will ever carry much weight with them; but as my whole heart and soul has, for the greater part of my life, been wrapped up in the welfare of the merchant-service, I cannot help raising my feeble voice in behalf of that service I have had the satisfaction of belonging to for so many years.

THE AUTHOR.

INTRODUCTION.

The following pages may prove useful to many, and especially to the junior officers of the service. The Hints contained in them are derived from long experience, and much thought on the various subjects treated of; and although some will be too ready to cry out, "These ideas are all very well on paper, but it is not so easy to carry them out in many of the difficult positions imagined," yet I am inclined to think that a man, in the hour of danger, and at his wits' end to know how to act, would have no objection to look at a work where the particular danger he was in was treated on. Many men find resources in the hour of danger, but they are often only impulses, and may or may not succeed. When in doubt or difficulty, sailing directories are pored over by the hour together, why may not practical hints be found equally useful to the man who gets his vessel ashore, has a fire on board, or, in short, meets with any calamity? Some useful hint suggested, and found in this little work, written when the head was clear, may, to many men in their hour of need, prove valuable; and young men may probably appreciate an attempt to teach what is so seldom taught—PRACTICAL EXPERIENCE.

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covered for the worst diseases, so may a man resort to the most desperate remedies to save the vessel he commands; and his boats being prepared, he will feel some little security when resorting to the measures here suggested.

It may be said that a cotton cargo wetted in this manner would swell and burst the sides of the vessel out; I doubt very much such a result, for the water could only partially get to the cotton in consequence of the screwing it undergoes.

FIRE.

This alarming cry on board ship throws everybody into a state of excitement, which is natural enough, but unfortunately much valuable time is thereby frequently lost before the proper measures are had recourse to, to overcome it. Perhaps the fire is in the between decks, and all hands are immediately busy mustering buckets, tubs, &c., and attempting to get it under, when there may be a powerful enemy at work adding fuel to flame, faster than the dampers in the shape of buckets of water can keep it under; I allude to the probability of the hatches being open, and the tremendous draft from the foot of courses rushing down the hatchways; now I would suggest immediately on an alarm of fire, that the hatches should be put on, the courses hauled up, and the ship kept before the wind; whilst this is being done, a few hands ought to muster every bucket, tub, &c., in the ship, and have all filled; take one hatch off near where the fire is situated, and a simultaneous dash of water by a dozen men will have more effect in checking the progress of flame, than the impotent efforts of throwing in a few buckets of water occasionally, whilst there is a thorough draft feeding the fire at the same time. If it is possible to get round a fire, then a sail thoroughly wetted, spread over, and water constantly applied to the top of the sail, will eventually smother it. How many cases have occurred on ship-board of the pitch-kettle *getting capsized*, and the galley filled with flame? when instead of water, blankets and monkey-jackets are put in requisition.

I once heard of an instance of a foresail catching fire from carelessness in boiling pitch, the foremast became enveloped in a sheet of flame, and everybody on deck stood aghast; the chief officer, who happened to be in his cabin, hearing a cry of fire, rushed on the deck; to get a carving-knife from the cuddy, and run up the fore-rigging, was the work of a moment, and calling on others to follow, the ready ideas of a sailor soon perceived the officer's intention; and the head of the sail being cut adrift, it fell on the forecastle, and saved the ship from inevitable destruction.

In the event of fire being in the hold, adopt the same plan with regard to putting on the lower deck hatches, if the ship has them; keeping before the wind, and hauling the courses up. If it is very apparent that no efforts on the part of the crew can get the fire under, when in the lower hold, then let the carpenter and half a-dozen men bore auger holes through the ship's side in the between-decks, and let the water in, whilst others are preparing boats in case they are wanted; the hatches and tarpaulines being on will prevent draft, and several hours may elapse before the deck is burnt through, which would be ample time to get the water up to the beams, and on such occasions it is better to damage all the cargo than lose the ship.

A fire may be so rapid that it is impossible to get it under, but the man whose energies soar the highest in the hour of danger, will frequently ward off what to others seems inevitable destruction. How many instances there are in cases of shipwreck where one man, by judicious management, has saved the lives of all on board; and another, wanting that lofty impulse of character which can stare danger in the face, or whose mind is lost when most wanted, sees a great sacrifice of life about to take place, without making the slightest effort to avert it.

COLLISIONS.

The Admiralty notice regarding lights is efficient as far as steamers are concerned, but not so with respect to sailing vessels. As the latter cannot always get out of the way of a steamer, or of each other, at night, the carrying of coloured lights might be extended to them without in any way injuring their efficiency for steamers. All sailing vessels running with the wind abaft their beams, when in narrow waters, should carry a plain light at the bowsprit end. All sailing vessels on a wind should carry no light, but if they see a steamer's or sailing vessel's light, then they should show a green or red light, according to the tack they are on. By adopting such simple measures as these, both the steamer and sailing vessel running will know how to steer to pass astern; and if a steamer sees the plain light of a sailing vessel it will be known that the vessel is unning, and the same rules can be observed in passing as in steamers; for instance, if the steamer sees the sailing vessel's light on the starboard bow, from the sailing vessel the steamer's green light must be seen; the steamer hauls to port, and the sailing vessel hauls to port; but if the sailing vessel is seen from the steamer's port bow, then the opposite plan is adopted; and if seen right ahead, both vessels port the helm as usual.

These rules would simplify matters, and in time be so generally known that collisions at night would be amongst the things that have been.

In the absence of other regulations, I will endeavour to give young officers a few hints how to avoid collisions, and at the same time comply with the Trinity Rules.

If a vessel is running with a fair wind, suppose up Channel at night, and sees another vessel beating down, the first thing to be done is to take the bearing of that vessel carefully by compass, and not, as is frequently the case, take the opinion of the look-out as to the tack she is on. How common is it for a man to say, "I think she is standing this way, Sir" (or otherwise as the case may be), and this opinion merely a guess, caused by a little yawing of his own vessel! The alteration in the bearing will soon point out on which tack the vessel is, and always steer to pass astern at night.

Sometimes two ships meeting have what is called a soldier's wind, that is, a beam wind for both vessels; the approach of two vessels, with this wind, if strong, is very rapid, and the proper plan is for a ship with the wind on starboard side to keep the luff, and for a ship with the wind on port side to keep away. It occasionally happens that either vessel may bear a little on each other's bow, and yet the one on port tack will keep away, with a view to give the other an opportunity of keeping his luff; now, when two ships are running at night with a beam wind, and see each other on either bow, it certainly appears better that each ship should luff or keep away according to the tack she is on, so as to open the distance. To exemplify this simply, let us suppose two ships in the English Channel, with a southerly wind, the ship A bound down Channel, the ship B bound up Channel, A sees B on his starboard bow, and B sees A on his starboard bow; now, it certainly would be better for each ship to widen the distance by A keeping his luff, and B keeping away, but according to the manner some men interpret the Trinity rules, B keeps his luff, being on the starboard tack, and A keeps away, being on port tack. But, perhaps, one man thinks there is no necessity for altering his course; the other says, I will conform to what I think the regulations direct, and puts his ship across the other one's bows; whereas had he kept his course, the two vessels would have gone clear of each other. I mention this, as I have seen danger frequently occur from it, and it serves to show that two or three Trinity rules are insufficient to guide the mariner on all occasions; whereas, if coloured lights for sailing vessels were in force, a green light being seen by each vessel would show them they ought to pass to starboard.

When two vessels are on a wind and crossing each other's bows, the one on port tack must give way, and the one on starboard tack keep the luff. It sometimes happens that an obstinate man whose vessel is on the port tack will persist in crossing the bows of a vessel on starboard tack, when it is impossible to do so, unless the other keeps away. At daylight this may be done to avoid a collision, although you would be perfectly justified in running into him; but at night, being unable to see, at the eleventh hour, if there is any intention of keeping away, the ship on starboard tack should always keep the luff, and even put the helm down; the vessel on port tack should also put the helm down, if the person in charge has been foolhardy enough to get under the bows of a ship on starboard tack, the two ships will then come alongside of each other without any material injury. At the same time, the vessel that was on port tack will be answerable for all the injury done to both vessels.

A sailing vessel meeting a steamer end on should always put the helm aport, and, as the steamer will do the same, no danger is likely to ensue.

If a steamer's green light is seen, starboard the helm, and haul away to port.

If a steamer's red light is seen, port the helm, and haul away to starboard.

It would be quite foreign to the purpose of this little work to enter into any discussion relative to the decisions given in the Court of Admiralty in cases of collision; the evidence is frequently so conflicting, that the cleverest men are at times puzzled. The Elder Brethren would be able to decide a point in seamanship immediately, if they could only arrive at the truth respecting the wind and the course steered. I would suggest that, when it is difficult from the evidence to ascertain this, the only way to clear up the point in dispute is, for the Elder Brethren to ascertain how the wind was, and what course each vessel ought to have been steering; the former can be known, if the wind has not been light and baffling, either by a Meteorological Register kept near the place, or by vessels within five miles of the parties; and the latter by the port bound to.

MAN OVERBOARD.

This startling cry causes more excitement on board ship than even "Breakers right ahead!" Everybody rushes aft to save a shipmate, and too frequently a scene of confusion ensues, and much valuable time is lost. Every officer patrolling the weary hours of his watch, should mentally ask himself, what would be the best plan to adopt under certain circumstances? and then he would be prepared to arrest the progress of those who rush heedlessly aft without any well-defined object in view, except to lower a quarter-boat down. In light winds a rush aft to lower a boat is of little importance, as the helm may be put down without danger; but, in a strong breeze, the masts may go over the side, if something is not done before the vessel comes up in the wind; and suppose her to be running with a strong breeze, and studding-sails set, the tacks and outer lower-halliards should be let go, royal, and top-gallant-halliards, and weather-head-braces; the yard will go forward as the vessel rounds to, and the slack of the lee-braces can be taken in. Whilst this is being done, you may be sure some hands are getting the boat ready; and the officer of the watch should bear in mind that the whole duty of preventing, in every possible way, the loss of spars, devolves upon him: there will always be plenty of help, and frequently too much to save the man. If a ship has no studding-sails set, and on a wind, call the hands about ship; the crew will answer to the call at such a time with alacrity, and in five minutes you will have the ship's head turned to the drowning man; or if going round gives a weather side for lowering a boat, do not do so, but throw all aback. Under double-reef-topsails at night no boat should be allowed to leave the ship. If by going about you can bring the vessel anywhere near, so as to see your shipmate, suppose a moonlight night, then Heaven forbid that any obstacle should be thrown in the way of volunteers; but endeavour, if possible, not to let impulse govern you at such a time, but judgment. The most useful boats for lowering at sea are little Deal punts, as their lightness prevents injury in lowering, for if dashed against the side of the vessel they will give to it, whereas a cutter would probably be stove in. It is a pity all ships are not furnished with one of these useful boats.

Quarter-boats are often improperly secured. There are frequently so many lashings, and too often the falls are taken, —which custom cannot be too strongly condemned,—that it takes a long time to get them ready for lowering. In addition to the gripes, a bit of old rope for steadying fore and aft to the davitt-heads, is lashing enough for any boat, and soon cut if required; but the falls should be always kept coiled in the boat clear; four oars ought to be secured to the thwarts, a cork or two in the landing, and thole-pins (if there are no rollocks) always ready at the holes to be shipped.

These observations may appear trivial to many, but I have seen so much confusion caused in lowering a boat when these little matters had to be looked after, that I feel sure any man who really wishes to save the life of a fellow-creature, will think them sufficiently important for notice.

RIDING AT ANCHOR IN A GALE OF WIND.

There are many who think that when a whole cable is veered to the clinch, that nothing more can be done to assist the vessel, and perhaps a few hints on this subject may prove useful.

A vessel when riding at anchor should never have a short scope of cable out, if the wind is strong. It is too much the *practice to* ride with forty-five fathoms of cable, blowing half a gale, and, in consequence, when more cable is given to the vessel, the jerking of the chain loosens the ground about the fluke of the anchor; and all seamen know that when once an anchor has started in a gale of wind, it will seldom get good hold again.

Windlasses are frequently torn to pieces by the chain tightening, then slacking round, as the vessel is drawn ahead or drops astern, when riding in a roadstead in a heavy gale of wind; and many an accident would be avoided if the following plan were adopted :—Reeve a good tackle, and hook the single block on to the chain, close to the windlass on the fore part—the double block to be hooked to a toggle in the hause-pipe; have this hove well tight. Then put another tackle on the chain abaft the windlass, and heave it tight also; the two tackles acting against each other will keep the chain always tight round the windlass, and prevent that dreadful surging so trying to a windlass, and straining to a ship. It is much better than all the shores used to support the windlass, even if they were as thick as the main-mast; and I feel confident no man will have reason to repent giving the plan a trial. I was told of it many years ago by an old sailor, and having given it several trials, I not only found the windlass to be better supported, but the ship ride easier.

It is a general opinion among seamen, that ships will ride better with one anchor, and a long scope of chain, than with two anchors down, and less chain; some have suggested that veering both cables to the end, on one anchor, would be the better plan. Now, as no man likes to set his life on the hazard of a die, I think the second anchor should be kept in reserve. I have seen a defective link cause a chain to break, and a sad disaster would have been the result if the second anchor had not brought the ship up.

When riding out a heavy gale, of course, seamen get their top-gallant masts and yards on deck; and, in addition to these spars being sent on deck, I would suggest—if going on shore is inevitable, should the vessel part from her anchor—that the lower yards be brought as low as the lifts will admit, and the topsail-yards canted up and down the topmasts. This will be of material assistance to the vessel in riding, and perhaps save the necessity for cutting away masts; no gear being cast adrift except the trusses, slings, and parrels, the yards can be got into their places again in an hour after the gale is over.

Should a vessel be driving, and it is necessary to let go a second anchor, if time will admit, the backing of the second anchor to the first should never be omitted; for it is too much to expect that the second anchor will hold if the first is coming home, with, perhaps, one hundred fathoms of cable out.

When a cable is veered to the clinch, there are times when it would be advisable to keep the second anchor ready backed to the first, by taking a length of stream chain, and bending one end to the chain the vessel is riding by, outside the hause-pipe, the other to the crown of the anchor intended to be let go if necessary; or two parts of a good hawser may be used for the same purpose.

These suggestions are intended for vessels that cannot be beat off a lee shore, or riding in bays,—the vessel probably discharging cargo, and not fit to go to sea,—for instance, such places as Table Bay, or Algoa Bay; and I would recommend all young officers touching at such places, and not intending to moor, to give their vessels seventy fathoms of cable when they anchor; it will prevent the anchor being fouled, and also starting, should a breeze come on suddenly.

RAFTS.

When these are wanted, it is too frequently at a time when they cannot be made; however, it may not always be so, and every seaman should have some idea how to prepare one. Lay the two largest spare spars on board over the taffrail, the ends projecting a little more than one-third over, and as wide apart from each other as one side of the ship will admit of; now lash cross pieces of studdingsail-yards, or booms, on the top of these, about every two or three feet; and then lay two more of the largest spars in the same manner as the first were laid, on the top of these cross pieces, and lash them to the underneath spars and cross pieces; now lay cross pieces on the top of these every two or three feet, and between the other cross pieces; afterwards lay two more spars on the top of the cross pieces in the same manner the first two were laid, and lash them to the two centre long spars and cross pieces; this process of laying spars may be repeated as long as there are spars to use; and having now, it is presumed, expended nearly all the spare spars on board, all the old planks, bulk heads, &c., must be collected to form a deck, which, nail to the upper cross pieces, and in addition lash cross pieces of spars athwart the deck to keep it from the rude assaults of the waves. A tolerable good raft is now formed, and having two ropes fast to it, the inner end may be lifted up, and as more than a third is over the taffrail, this will not be found difficult, nor yet the launching, if a little grease is rubbed on the underneath part of the spars. When in the water the raft can be hauled alongside, and provisions, water, &c., secured on the top; and if there are any more small spars, I would recommend a hurricane bulwark to be put all round.

It must be evident that this plan can only be adopted when a vessel has but little motion, for it would be impossible to cast spars adrift for the purpose of rigging a raft in a gale of wind, or the ship rolling gunwales under; but the following plan for a raft, which I am indebted to an intelligent officer for the idea of, appears to me so simple, and at the same time so much in the power of every seaman to construct in the heaviest gale, that I am induced to describe the method.

Take three topmast or topgallant-studding sail booms, and lay them on the deck, then drive dogs or staples, one about a foot from the end of each spar, and one about a third from the other end of each spar; pass a lashing slack through those dogs a third from the end; then lift one end of the spars up, open out, and a triangle will be formed; a lashing can now be passed through the dogs at the lower end to keep the heels steady, and if considered requisite in consequence of the heavy lurching of the vessel, the lower ends can have a steadying line from the sides of the ship. Having got the triangle raised there will be little difficulty in completing the raft, as the men will have the legs of the triangle to hold on by; now lash from leg to leg of the triangle three small spars close to the lower ends, and also the same number of small spars about two feet from the ends, drive staples or nails to keep the lashings from slipping, then between the cross pieces lash three empty water casks (provision barrels will answer), adopting such methods with cross lashings as will prevent the possibility of their slipping.

The raft is rigged; the upper part is the cradle, where rope may be hitched to form a sort of net-work, and a dozen men may find comparative safety in it; no sea can wash them out, and as nothing can capsize a raft made in this manner, it may be lifted up by three or four men and thrown overboard in the hour of need; room for a keg of water, cask of bread, or tin meats, can be found in the cradle; and at that awful time when all hope of keeping the vessel afloat is over, a couple of rafts such as above described, kept close aft to be out of the way of any rigging, would float as the vessel foundered, and be far preferable in point of safety to a boat; or a vessel may be fast breaking up on the rocks, no assistance can be got from the shore, then such a raft would be valuable indeed; the casks lashed so that their bilges project below the ends of the spars, would be so little under the water, even with a dozen men on the top, that the raft would be washed almost high and dry upon the beach; no current, no breakers, can capsize it, or force it adrift, if common precaution be used in securing the lashings; and as twenty minutes will rig one, I hope the plan may become generally known.

CUTTING MASTS AWAY.

Always cut the lee rigging away first, then the stays, and afterwards the weather rigging. If riding head to wind, cut away all the rigging on both sides, except the two foremost shrouds, then cut the stays and foremost shrouds together, and stand by for a run forward, as the mast falls on either quarter.

SCUDDING IN A HEAVY GALE OF WIND.

A ship should have plenty of canvass when scudding in a heavy gale, and experience seems to teach that a close-reefed main topsail, *double*-reefed fore topsail, reefed foresail, and a fore topmast staysail, is the sail that a vessel will steer under the best; in fact, she would steer better without a main topsail, but it is prudent to carry this sail in case of having to round to.

This refers to the common gales in high latitudes; but if there is any analogy between the terrestrial meteor, known too well by seamen under the name of hurricane, and gales of wind in high latitudes, then considerable judgment must be used to ascertain that the track of the storm is not being passed.

I am very much inclined to think that meteorologists are right in supposing that all winds are circular in their motion, but at the same time it appears to me that only gales form a complete circle, and that moderate winds move in arcs of circles, not being sufficiently strong to oppose veins of other wind that break into them, and this will account in some measure for winds backing so frequently as they do.

A knowledge of the law of storms will tell any shipmaster how to avoid getting too near the centre of a gale of wind, and this knowledge may frequently enable him to make a fair wind of a storm, when another man not understanding the subject is thrown on his beam-ends.

The recommendation to scud under the sail mentioned is intended as a hint to those, who frequently get pooped for want of spreading canvass; at the same time, if the force of the wind increases so much that there is danger of the canvass set being blown away, then the vessel ought to be rounded to, as it shows that the centre of a storm is getting nearer. The tack on which to round to is known by those who have studied the theory; and those who have not done so, or who do not believe in the truth of facts now fully established, must run the chance of putting their vessel on the right tack.

Great care is requisite when rounding a ship to in a heavy gale, and to the inexperienced perhaps a hint or two may be acceptable. After taking in the foresail and fore topsail, do not wait to furl them, but let the hands be ready to haul the main-yard forward; now watch the sea well astern, and if a towering wave is coming along,. wait till it passes, two others are sure to follow, and then probably for a mile astern will only be seen, comparatively speaking, a moderate undulation of the water; not a moment is now to be-lost, for as soon as the third mountainous wave has lifted the ship, and no more are seen likely to follow immediately, put the helm down, and round to as quick as possible. Some men bring a ship slowly to the wind: this is not right; the sooner a ship is brought to the wind in a heavy gale the better, as it stands to reason, the longer a ship's broadside is exposed to the sea, the greater is the danger of a mountainous wave rushing on board and making a clean sweep. Having succeeded in bringing the ship to the wind without accident, watch her coming up, and falling off, as directed in the hints contained when laying to in a gale of wind.

LAYING TO IN A GALE OF WIND.

Although the generality of ships will lay to better under a close-reefed main topsail than any other sail, there are some that will not, and seamen should not consider that they have done everything when they have rounded to under this sail, but should watch the compass narrowly, and if the vessel does not come up or fall off more than two points, they may rest satisfied with the sail set, but if the weather-leach of the main topsail is shaken occasionally, and the vessel falls off so as to bring the wind abaft the beam, it shows the canvass set is not suited for laying to with, and other sails must be tried. Some vessels will lay to well under a close-reefed main topsail, and fore topmast staysail, or fore staysail, others require a main trysail, but this can only be ascertained by experiment: some vessels will not lay to under any canvass, and require fore-reaching, particularly sharp-built vessels.

It frequently happens that there is more danger when the gale is broken; the sea then tops, as seamen term it, and breaks hollow, and frequently a whole deluge of water rushes on board between the fore and main rigging, carrying everything before it, and it is discovered too late that the ship wants more canvass. I would strongly recommend every officer to make a little sail when he thinks the gale is breaking; the advantage of this is obvious; and if instead of getting under the lee of the bulwark, or boat, he will stand near the man at the wheel, and have the helm put down when he sees a towering wave rushing onwards, and likely to break on board, many a fearful disaster would be avoided.

The practice of lashing the wheel chains, or wheel, cannot be too strongly condemned. I once saw a vessel nearly foundering from this cause; the only plan that ought to be allowed, with a view to assist the helmsman, is to pass a couple of round turns with a twigling line on one of the spokes of the wheel, and allow him to hold the end in his hand: this is sufficient to keep him from being thrown over the wheel, and at the same time can be let go instantly when required. If there is much jerking from the wheel chains being slack, put a watch tackle on the standing part; it can be let go immediately when necessary.

The practice of putting the helm hard down is a very bad one, many a rudder having been broken from this cause. When a ship is laid to, she is supposed to have no head way, but as all vessels will naturally forge ahead, it seems right that the helm should be put down a little. Sharp built vessels will frequently, if proper canvass be set in a gale of wind, forge ahead with the helm amidships, and keep close to the wind by the hour together without requiring the helm to be moved.

TAKING A BOWER ANCHOR OUT.

It does happen sometimes that a vessel is put ashore in a place where the master is left entirely to his own resources to get her off again. As a general rule, a vessel will come off a reef the way she went on better than any other, but as all rules have exceptions, it would be advisable to sound all round the ship before determining on this point.

As few ships have a long boat capable of carrying their bower anchor and cable out, the following hints may prove useful to many. Buoy a kedge and lay it out with a whole warp attached, in the direction it is intended to haul the vessel off; and whilst this is being done get sixty fathoms of a bower cable paid from the vessel's quarter into the long boat, leaving two or three fathoms in the bows of the boat to shackle to the anchor, the rest may be stowed in the middle of the boat; have a piece of spar laid across the stern of the boat, and lashed for the chain to run over, or an old mat nailed over will do as well; fit good stoppers to the ring-bolt in the stern, and after-thwart, that there may be no possibility of the chain running out of the long boat faster than is required; now if the vessel has two quarter boats, hang a bower anchor between them to a spar laid across the gunwales of each boat; the end of the chain in the bows of the long boat being shackled to the anchor, which must be well buoyed, proceed to haul the two quarter boats out by the warp, which can be done by hands in either boat, the long boat following, and having the cable paid out as required; when the whole sixty fathoms is laid out, hang the bight of the chain outside the long boat by a slip-rope to the ring-bolt in the stern, and immediately the anchor is cut adrift from the small boats let go the slip-rope. This plan is extremely simple, and can do no injury to any boats, if common precaution be taken to have the stoppers fitted in the long boat in such a manner, that the cable cannot go by the run; and as the cable should pass over the after-thwart, the stopper there will be found more useful, but it will be prudent to have two.

Should the vessel have a long boat, and only one quarter boat, the same plan may be adopted, substituting the long boat, in which weight can be placed if considered necessary (independent of the cable) so as to bring her gunwale on the same level, or nearly so, as the smaller boat.

It too frequently happens in English ships that there is not a boat on board that will float, in which case a raft will carry out an anchor and cable quite as well; directions for constructing which will be found in this work.

Having got a bower anchor laid out and hove well tight, instead of losing time, and carrying every tackle in the ship away in futile efforts to heave the vessel off, consider what is best to be done to lighten her, if dead weight of little value is handy throw twenty or thirty tons overboard; if valuable, and the beach is near, land the same quantity if practicable, and then heave away upon the anchor out astern.

There are few places in the world, where a man can get his vessel aground, that the time of high water is not known on full and change days, and I would recommend the shipmaster who is unfortunate enough to put his vessel ashore, immediately to ascertain the state of the tide, and what rise and fall there is; it may so happen that the vessel gets aground near low water, and the stream anchor with the best warp carried out may be sufficient to heave the vessel off again as the tide rises; at all events, it will prevent the ship, if hove well tight, from getting further on to the reef during the flood.

These suggestions refer to a case when the vessel is not bilged, and there is a possibility of getting her afloat. In steamers that are unfortunate enough to be run aground, no back stroke should be given, till it is well ascertained that they are not likely to make more water, than can be kept under; the ten minutes that would elapse to certify this can be of little importance, compared to the risk of life if the steamer founders shortly after she is afloat again. Had this been admitted as an universal rule, the sacrifice of many lives would have been avoided.

CLUB HAULING.

This manœuvre is more honoured in the breach than in the observance, and for any use it is,—at least for merchant ships —might almost be expunged from nautical tactics. A ship is supposed to be on a lee shore in a gale of wind, where there is anchorage; she will not stay, and there is no room to veer, and going on shore is inevitable, unless the vessel can be got on the other tack. Unshackle the chain at thirty fathoms and secure the end well to a ring-bolt close to the windlass, see the anchor all clear, and station hands for about ship; put the helm down, and when the vessel comes head to wind, haul the after-yards round, and let go the anchor at the same time; if the chain does not part, it will bring the wind on the other bow; then shift the helm immediately, and cut the stopper, and haul round the head-yards as soon as the after-sails are filling.

In a very smart vessel that will beat off a lee shore this manœuvre may be attempted, and in addition I would recommend the stoutest hawser in the ship being passed out as far aft as possible on the lee side, bent to the chain, and thirty fathom of slack left all clear, and the bight made fast to the mizenmast. In case the chain should part, this will probably jerk the vessel round before it parts also.

With a dull sailing ship on a lee shore, and losing ground every time a stern-board is made, if there is anchorage, I would recommend the masts being cut away, both anchors let go, and after the cables are veered to the clinch, such measures adopted for making the vessel ride easy as recommended in "Hints for Riding in a Heavy Gale of Wind."

If there is no anchorage except alongside the rocks, then persevere with stern-boards, and trust to Providence.

JURY RUDDER.

A friend of mine, many years ago, told me of a plan for rigging a jury rudder, which being extremely simple, and the materials generally at hand, I think ought to be known.

Take a spare topmast, and an iron band, such as round a lower yard; any band not too small for the topmast will do, as it can be woolded round, and leathered if too large; in fact, leathering should always be done to keep off chafe; this band is intended for the lower end of the topmast, which is the main piece of the rudder, to travel in; a lower cap will now be wanted for the upper part of the mast, the square hole must be cut out to fit into the stern-post, and the round hole is for the upper part of the topmast to travel in. The spare topmast being the main piece of the rudder, can have short pieces of spars bolted to it so as to give a rudder-form, and plank can be nailed athwart to give increased strength; and a tiller can be fitted. The band of iron for the heel of rudder will require a chain on each side to reach nearly to the fore-channels, and it is obvious that if there were two eye-bolts in this band, nothing could be better for securing the chain to, but of course any seaman can plan according to materials; a piece must be cut out of the spar next the topmast, at the lower end, where the iron band comes, so that the working of the rudder may not be impeded, and it would be desirable to have a small piece of iron plate nailed on the rudder, to keep the band from working upwards,—if there is woolding on the band, this will not be wanted, as the upper part of the notch in the spar next the topmast will be sufficient. The chains will require two tackles at the fore-channels, to bind the iron band close to the stern post; everything being ready, a kedge with a slip-rope will be wanted to sink the rudder, which, being put over the side, and brought to the rudder trunk, can easily be hauled into its place, the chains hauled tight forward, —one on either side,—the cap put on, shipped in stern-post and bolted, the tiller shipped, and a lashing being put on each side the rudder-head to the deck, to keep the rudder from lifting, it will be found that a vessel will steer as well as ever with a rudder of this description.

SQUALLS.

It is well known to seamen that there are three kinds of squalls: the white squall; the arched squall; and the descending squall. The white squall is seldom experienced by vessels trading to India, but is common enough in the Mediterranean, and as it only gives notice of its approach by a ripple on the water, great expedition is necessary to reduce canvass. I have heard that a small white cloud is sometimes seen at night rising rapidly when a white squall is approaching, but never having experienced one at night myself, I cannot say with certainty that this is the case; however, it seems probable, and is worthy of attention.

The arched squall, as its name indicates, rises in the form of an arch, and if the edges are well defined, and show one unbroken circular line, it is the signal that something severe may be expected.

The descending squall is a black cloud without any regular shape, the wind from which is never felt till nearly over the mast-heads. If this kind of squall, when first seen on the horizon, rises rapidly, it is a sign that wind may be expected, and the sooner sail is reduced the better. It may be taken as a general rule, that when the clouds are broken, the edges ill defined, and the horizon or stars seen underneath, no violent wind may be anticipated; but as there are exceptions to all rules, the careful officer, especially at night, will not neglect to reduce sail; aërial currents are sometimes formed by the breaking up of a squall, which will take a topmast out of a ship, and the next minute all is calm, so that it is sometimes impossible for the most experienced seaman to judge of the weight of a squall; always be on the safe side, especially at night time, and let the first burst of a squall strike the ship on the quarter; if it is violent the vessel will be under command, and it is better to run for a quarter of an hour out of the course than lose the topmasts. The weight of wind in a squall should never be judged of by the apparent extent of the squall, as a small black cloud will frequently bring as much wind as a large one. At daylight the violence of a squall can be ascertained better than at night, by the ripple on the water, or by seeing through it, as sailors term it.

CAUGHT IN A SQUALL WITH STUDDINGSAILS SET.

Many young officers lose their presence of mind at such a time; the best plan is to let fly studdingsail tacks, and outer lower halliards, and get the spanker in, if set. This will give command over the vessel to keep her before the wind if requisite. In letting go royal and topgallant-halliards in a squall, never start a sheet, even the topsail-halliards may be let go, and the yard will come down without the topgallant-sheets being slacked; many a sail is split to pieces by attempting to clue it up in a squall, whereas if the halliards only are let go, and the yards clued down, till the first burst of the squall is over, there would be little danger of losing anything. Letting go the halliards of square sails, of course refers to a time when no studdingsails are set, as the studdingsail-halliards would prevent a yard from coming down; but if the squall is very severe, then the studdingsail-halliards should be let go, that the yards may come down, as it is better to lose a studdingsail than a topmast, but the studdingsails after the squall is over, will generally be picked up across the stays.

A HINT FOR HIGH NORTHERN LATITUDES.

In high northern latitudes if running in a strong breeze with studdingsails set, and the wind south-west, as soon as it comes on to rain heavy, or the least break in the weather is seen in the north-west quarter, the sooner studdingsails are taken in the better, as the wind is certain to come from that quarter.

CROSSING A SHIP'S BOWS AT ANCHOR.

It is not generally known among young officers that in crossing a vessel's bows riding at anchor in a tide way, the moment the vessel's masts appear in one—suppose you are looking from the poop or quarter-deck—all danger from collision is over.

CHAPTER II.

Hints on Seamanship, and Miscellaneous.

LOWER MASTS AND OTHER SPARS GETTING ON BOARD AND RIGGED.

THE shears being alongside and no masts standing, the recommendation of old was to parbuckle them in, but I cannot see how heavy spars can be got over a ship's topgallant bulwark without breaking it, and I think the better plan is to have a small pair of shears forward, with two tackles on the head of them, and get the spars intended for shears in over the bows.

After the shears are on board, if it is intended to commence with the mizenmast, cross the small ends over the break of the poop, or taffrail, if no poop, and pass the lashing athwart; the purchase block must be lashed fore-and-aftways, and having fitted four guys to the shear heads, one for each side forward, and one for each side aft (topsail sheets will answer for this purpose), put tackles on each of these guys, to tighten them when the shears are erected; a tackle will also be wanted at one of the shear heads for a truss tackle; have a piece of hard wood plank put under the heels of the shears, which should be on a beam, and lash the heel to the stanchions or ring-bolts. Having rove the purchase, hook the lower block to the night heads forward, and lead the end of the fall to the windlass, and heave away; when the shears are raised sufficiently high to plumb the hole in the deck for the mizenmast, haul the guys well tight, and unhook the purchase block from forward, and lash it to the mizenmast alongside, about a fathom or more from the deck. I have frequently seen officers of ships have a great deal of trouble for want of forethought, and they have been obliged to hang the mast alongside, to relash the purchase block; now every officer taking a mast in, should know the distance from the upper purchase block to the rail; and see that the lower block is not lashed outside this distance, measuring from the heel of the mast, otherwise there will be a difficulty in getting it over the rail, or even if that be overcome, the heel may not go into the mast hole.

When the head of the mast is a little above the rail, put the trussle trees and top over; the truss tackle can be used for this purpose, and it takes less time than after the mast is stepped; taking care to hook the truss tackle to the masthead afterwards, as it will be required to cant the mast for stepping. The head of a mast should be aft when it comes in abaft the shears, which of course depends upon whether the shears are on the fore or after-part of the mast hole. Having hove the mizenmast in and stepped it, haul the shears upright by the tackle on the guys, and bowse the heels of the shears forward, taking care to have a tackle on the after-part of the heels to ease away with, slack away the after-guys, and haul on the fore ones at the same time; when the heels of the shears are on the beam before the partners of the mainmast, let the upper part of the shears plumb immediately over the mast hole; and having hauled the guys tight, relashed the heels, and placed shores under the beams in way of heel, lash the purchase block as mentioned in taking a mizenmast in; put on the truss tackle at the masthead, and heave in; adopting the same plan as recommended in taking a mizenmast in, of putting on trussle trees and top, when the masthead is a little above the rail. After the mainmast is in, bowse the heels forward as already directed, and adopt the same plan in getting the foremast in; then droop the shears over the stem, and get the bowsprit in; the bowsprit ought to be slung amidships or nearly so, according to the length inside the topgallant forecastle; the truss tackle will be wanted on the outer end to cant the heel, and also two guys to assist in steadying the bowsprit when pointing the heel through the night-heads.

If the trussle-trees and tops have not been put on when the masts were coming in, they ought to be before the shears are removed from each mast, as it is much easier done, particularly the trussle-trees; however, it may happen they are not ready, and the masts being in, the shears are unrigged, in which case there are only two methods by which the trussle-trees can be got over, unless the vessel is small, when two men can easily lift one end; but if the vessel is of any size, one plan is to take a chock out, and sway them up with gantlines; the other is to lash a studding sail-boom, or other spar, up and down the mast, and have two gantlines on the end: by the latter plan the trussle-trees can be slung amidships, and easily placed over the masthead. To get a top over a spar is not required, but two gantlines are wanted, one on each side of the lower masthead; send the top from the deck abaft the mast, and fore part uppermost; pass the gantlines on the underneath part of the top, and hitch them to after-cross-tree, and put stops on all the cross-trees in the way of the bolt holes, and stop the rim: when the rim of the top reaches the gantline blocks, cut the stops, and sway away again, then cut the next stops, and so on, when the top will fall over in its place without injury, as the gantlines will keep it from going down too rapidly; it would be as well if the last stop, instead of being cut, were eased away, to prevent the top going over the masthead with a jerk.

The lower rigging of vessels is frequently put over a ship's masthead, as if it had been thrown there, and perhaps the following hints may prove useful to many:—After the top is bolted, and bolsters, well parcelled and tarred, put on: the starboard foremost pair of shrouds should be put over first, and the officer ought to see by standing in the channels, or on the rail, if the seizing aloft bears in a parallel direction between the two lower dead eyes, the shrouds will be set up to; the foremost pair of shrouds on port side are next put over the masthead, and the same directions followed to ascertain if the seizing is placed fair; the next pair of shrouds are put over on starboard side, the next on port side, and alternately, till they are all put over, following the recommendation already given of having the seizings to come in a parallel direction, looking from the channels, between the two dead eyes the shrouds will be set up to: by adopting this plan, all the seizings will lay clear of each other, and the officer can ascertain for himself without going aloft that they are so. As each pair of shrouds are put over the masthead, they should be driven as close down as possible: the stay is now to be placed abaft, and below all, and not, as is too frequently the case, stuck above the rigging.

The topmasts and lower yards had better be launched on board over the bows, as there is less likelihood of the topgallant bulwark being broken by doing so. Before pointing the topmasts through the trussle-trees, send the lower cap in the top by a gantline, and place it over the hole for the topmast to reeve in, stop it to the sheave hole of the topmast as the mast goes up, and when high enough, place it on lower masthead, casting the lashing off that stopped it to the sheave hole of the topmast, drive the cap close on to the lower mast, and put a gantline on to the head of the topmast, and having swayed the mast up six or eight feet, send the topmast cross-trees up by the gantline, and lay them across the lower cap abaft the topmast, now lower the topmast down, and slide the cross-trees over the hole in the cap where topmast comes, and sway away topmast again till high enough for placing the rigging; and having got the cross-trees in their place, and put the bolsters on, adopt the same measures in placing the topmast rigging as recommended for the lower rigging. In large ships many men prefer heaving a topmast up first and rigging it afterwards.

A mainyard should be sent up by a tackle, and slung amidships; two hands are required in the top to reeve the lifts, and take in the slack as the yard comes up.

The topsail yards are sent from the deck in the same manner as a topgallant yard, with yardarm and quarterstops, but the slack of the upper lift should be taken in before the yardarm-stop is cast off, so as not to let so heavy a yard as a topsail-yard go with a jerk.

More jib-booms and bowsprits are carried away by having the bobstays and martingales too tight, than from any other cause; it stands to reason if a bowsprit and jib-boom has no play, when a ship is plunging very heavily, that something must give way. These remarks are not intended to show that the bobstays should be slack at any time, but are intended as hints to those officers who think they can never get a bobstay too tight, or a jib-boom buckled down too much. The officer who can get a ship's lower masts in, is capable of finishing the rigging of a vessel.

There is much required that cannot be explained without a great deal of circumlocution; and practical seamanship is never learned by books; no officer, therefore, should despise the hint of a good seaman, given in a respectful manner; but let him be careful of being swayed to and fro by every goose who fancies himself a better seaman than he really is.

GETTING MACHINERY OUT.

If machinery is heavy, the best plan is to cant the main-yard a little; untruss, and lash it to the mainmast, then have a spare spar, with a piece of plank under the heel, for a shore from the deck, lashed to the yard about a foot inside where the yard tackle comes. Over the main hatchway a pair of shears should be rigged, with planks under the heels, which should be on the beam before the main hatchway, and the beam well shored in the between-decks. According to size of shears, and strength of purchase, almost any weight can be lifted out in this manner; and I would recommend young officers, when getting heavy machinery out, to use the yard tackle over the hatchway, as well as the other in case of accident; and in lowering over the side use the tackle on the shears to lower with, as well as the yard tackle.

MAKING A STERN-BOARD.

This manœuvre is of great utility, and ought to be more generally practised, when a ship will not stay. It is extremely simple, and when important that no ground should be lost, preferable to veering ship in the usual manner, as the watch at night can always manage it.

Suppose a ship to be under double reefs, foresail, main trysail, and fore topmast staysail; the best plan is to haul the foresail up, and take the main trysail in; then station hands at the fore and after braces; put the helm down, and when the ship comes head to wind, or as close as she will come, throw all aback, the after yards square, the fore yard abox; she will immediately pay short round on her heel, and the yards may be trimmed as requisite; when she gathers headway, shift the helm, haul the staysail-sheet over, and brace up; the foresail and main trysail can be set at leisure.

I need not point out to the experienced seaman how preferable this plan is to that of putting the helm up at once, probably with the foresail set, and allowing the vessel to run for miles out of her course: and then the fore-yard flies round with a jerk, the fore-tack goes into the staysail netting, and the fore-sheet into the middle of next week, and you are absolutely compelled to keep the ship running, that the slack of the fore-tack and fore-sheet may be gathered in, or probably the foresail would be split to pieces. The only objection that can be raised to making a stern-board is, that seamen do not like stern-way in a gale of wind, especially if the vessel has much overhang; but they may rest assured there is not the slightest danger—the vessel gets very little stern-way, coming round almost in her own length; the dead lights had certainly better be in if a vessel be loaded, but they need not be afraid of any sea injuring the vessel by adopting the above manœuvre.

TAKEN ABACK.

This will often occur; and yet many young officers get bewildered, especially if it happens in a squall. I have seen some begin to haul the jib down, others make an attempt to haul the head-yards round, and, like all ignorant people, highly offended when shown the right way. Under any circumstances, even if brought by the lee, the proper way to act is to shiver the after-sails on the main and mizen masts, and brail the spanker up if set: the ship will immediately pay round on her heel, and the after-yards can be trimmed as the sails fill; or if the vessel is wanted on the other tack, haul the head-yards round as soon as the after-sails fill, steady the helm, and trim as wanted.

BOX HAULING.

When a ship is on a wind, she will sometimes come to against her helm; flattening in the head-sheets, and easing off the spanker sheet will not always prevent a vessel from coming round, and it may be important to keep her from doing so: the fore-yard must be laid abox, which is done by letting go the fore-tack and bow-line, fore-sheet and lee-braces, and haul the fore-yard round as much as possible; if taken in time, this will have the desired effect.

REEFING WHEN SCUDDING.

The fore-topsail is easily reefed under the lee of the main-topsail, if the ship is kept before the wind, but it is almost impossible to double reef a main-topsail with the mainsail set; therefore, if blowing very hard, haul it up; keep the wind a little on the quarter, and brace the main and topsail yards by, and parallel with, each other, till the wind is well out of the sail, then haul the reef tackles out, and bunt-lines tight; a good helmsman ought to be at the wheel.

HAULING A MAINSAIL UP.

Man the weather clue garnet and buntlines, ease off the main sheet a fathom or two, and belay; then slack away the main-tack, and haul up weather clue garnet and buntlines, taking care to caution the man at the wheel to keep the sail full; when the weather clue is up, and as much of the buntlines as can be got, then luff the vessel as close to the wind as possible, ease away the main-sheet, and haul the lee clue garnet up, and buntlines at the same time. By adopting this plan, if the sail is ever so old, there is no danger of splitting it.

A foresail should be hauled up in the same manner.

CLUEING A TOPSAIL UP IN A GALE OF WIND.

Slack away the weather sheet, and haul the weather clue line close up, and the buntlines as much as possible; then man the weather brace, let go the lee one, and as the lee sheet is started, haul in upon the weather brace, and haul up the lee clueline and buntline. In taking a top-gallant sail in, the opposite plan should be adopted; the lee clueline and buntline are hauled up first, and the weather brace hauled in.

OFFICERS' DUTIES.

The duties of officers vary so much in different vessels, that I can only give a few hints as to those duties which are, or ought to be, general throughout the merchant service.

In large India ships, where boatswains and boatswains' mates are carried, the officers are not obliged to dabble among tar pots, &c., in the same way as in ships where these petty officers are not allowed; neither is it requisite, to make a good officer, that a man should be up to his ears in tar, or be capable of turning a dead eye in, as well as a rigger; it is sufficient if, like Liston, who said, " he knew when a dinner table was laid out well, although he could not do it himself," that the officer know when the work he has ordered to be done, is done well and quickly. Some of the best officers in the service have been brought up in these ships; they have taken kindly to the sea, and being men of education, are prepared to meet every emergency liable to occur on ship-board. At the same time, there are others who take no interest in their profession, but simply perform a general routine of duty, like a horse in a mill, and, when things go a little contrary, having no resources, no ideas, they bungle through, dissatisfied themselves, and making everybody about them the same. These must be the fools of the family who, it is said, are always sent to sea. Alas! how frequently do boys mistake their calling, and how often do friends persist in forcing them to remain at sea, although the first voyage has shown that they are quite unfitted to grapple with the many and various duties required. An officer commencing his career on the quarter-deck, unless he shows an inclination to learn, and conquer every difficulty of his profession, is less likely to make a good one, than an intelligent boy who begins from the hause-pipe. It is a mistaken notion to suppose that boys learn to be more vicious in a forecastle. I do not think that such is the case. If there is no inclination on the part of the boy to be vicious, living in a forecastle will not make him so. The roughness of the tar will be shaken off in every step of the officer, if a determination to remain vulgar does not exist. However, there are exceptions in all cases, and these observations are merely intended as hints to young officers, who think the roughness of the tar is indispensable for making them more efficient in their duties.

It frequently happens that the captain and chief officer cannot work in unison: the latter imagines that the captain encroaches upon his duties, and will not avail himself of any suggestion emanating from his superior officer; at the same time, it must be admitted, that ship-masters too frequently interfere in the manner in which their own orders are carried out. Every chief officer should be wedded to his ship. If he does not take an interest in her, things never go right; and whilst, in the position of an officer, I would recommend him to pay all due deference to the wishes of his captain, however much he may dislike the man, he will find that a determination on his part to do so will be more conducive to his comfort in the end. The rules and regulations established by his captain—and they differ in many ships—he ought to see are carried out, however much he may disapprove of them, after ascertaining that his captain will not allow them to be altered.

" Different ships—different rules," is an old saying; and no officer has a right, when he hires his services in another vessel, to say—" I will bring the rules I had in my last ship," if he finds them distasteful to his captain.

A good chief officer is invaluable, and nothing that could be written would ever teach him the duties of one. The knowledge requisite must be innate; and the great desideratum is—system.

There are many young officers who think that when they relieve the watch at night, all they have got to do is to put a cigar in their mouths, and keep their eyes open; and instead of ascertaining if the man at the wheel is steering the course given, they take it for granted. Now, immediately the officer they have relieved leaves the deck, they should see that the man at the wheel is steering the proper course, and then having had a look aloft, they should go round the decks, look over the sides and bows to see that no ropes are towing overboard, ascertain who has the look-out, give a look aloft forward, and, finally, find their way aft again. The bells should be struck regularly every half-hour—it keeps the look-out more alert, although the officer of the watch should never depend upon that, but take an occasional look under the foot of the mainsail himself. Ropes are too frequently left anything but clear, and one watch will blame the other, when the fault rests entirely with the officer, who, not liking or unwilling to speak when it is not done, breaks through a system; whereas, if he persisted in seeing they were clear himself, his watch, at first grumbling about being so particular, would eventually fall into his plan, and think it right. Let not the ears hear every observation; mutterers there are, and always will be; rather take a rope and coil away, and shame will eventually do away with the necessity that compelled you to set an example.

If a junior officer, be careful to call the captain in time, should a squall be rising, as it takes the responsibility off your shoulders. Always make sail, or take in sail, without a second thought as to its being palatable to your watch; if you do not they will be apt to grumble at every little thing that is done. If a light is absolutely necessary in a ship's hold, never trust it with any person but an officer, who should on no account allow the lantern to be opened. Avoid harassing or drilling, if dissatisfied with your watch, it only makes matters worse, and besides when work is really requisite, it will be thought you are drilling. Speak to a man determinately, but not uncourteously, men never dislike a sharp officer if he blends the "Fortiter in re," with the "Suaviter in modo." Young officers instead of dreaming of home, and building castles in the air eternally, to pass the weary hours of their watch away, should ask themselves questions connected with their profession, and on moonlight nights practise lunars; many an hour will then pass pleasantly and usefully away. Every man may learn something new at times, and wrinkles are valuable—not on ladies' faces, but on knowledge; what would the old tailed tars say to the manner in which the tailless tars of the present day rig their ships? and yet everybody must admit the plan is superior.

Nothing shows a careless officer more than omitting to trim or make sail in the morning watch; if the night has been squally, and studding or other sails have been taken in, the officer of the morning watch should, if the weather has improved, set such sail as a ship will bear, beginning at break of day, and not wait as too many do till after the decks are washed. If there is no sail to make, then after washing the decks, the sail set should be trimmed where requisite, ropes coiled clear, &c.

How frequently does the captain of a ship come on deck in the morning, and after giving a glance aloft, find many of the sails ill set, and then looking over the side perceives ropes innumerable towing overboard; with some men remonstrance on these little matters seems to have no effect; they are the men who blunder through their duties, and seem to take no interest in anything they do, consequently everything appears irksome to them.

Laying dunnage in a ship's hold is very important, and yet too frequently much carelessness is displayed; the first tier of dunnage should be laid athwartships, and not too close, so as to allow a free passage for the wash of any water that may get on the inside lining of the vessel; from nine inches to a foot on each side the kelson is sufficient dunnage for sugar, saltpetre, &c., increasing as the bilge is approached to a foot or fifteen inches, and the bilge dunnage should be carried well up; this important matter is too often neglected, and consequently when a ship is laying along in heavy weather, the water will splash over the skin at the upper part of the round of the bilge, and generally if the ship has encountered any heavy weather, cargo will be found damaged there. The limbers should always be cleared out previous to taking in a dry cargo. In stowing any description of cargo longers should be kept square and as level as possible, it is better to leave considerable breakage than neglect this most important rule. Although anchors and cables are very essential things to have clear, I have frequently seen gross carelessness displayed by the officer whose duty it was to get the anchors over the bows and cables bent. When reeving the cat head stopper, care should be taken that it is abaft the shackle of the chain; perhaps the chain has been bent before the anchor was got out, and the shackle having slipped on to the after part of the ring, the stopper is passed without proper observation, consequently when the anchor is let go, the chain, if there is not much slack over the bows, will frequently jam the stopper before it can unreeve through the ring of the anchor. The bight of the chain after the slack is hauled through the hause-pipe should always be stopped up to the head rail. The second part of the chain from amidships round the windlass, should always be ranged abaft, and the norman ought to go down to the deck, through the windlass, between the first part from the side, and also the first part from the side underneath; in laying the range on the deck, haul it tight back from the windlass; and if these simple rules are always adopted there can never be any danger of the anchor being foul when it is required.

The practice of clearing one end of a ship first for the reception of cargo cannot be too strongly condemned; it is most lubberly, and injurious to the vessel, and can only be pardonable when there is a leak to stop, or copper to be mended. The weight required in a ship should be kept amidships, and cargo put into the fore and after holds. Should the vessel be unusually crank, and require much cargo to stiffen her, before that which was left amidships can be removed, then it would be prudent before all the weight is taken out, to let the cargo put into each end of the ship, meet at the main hatchway as much as possible, so as to avoid having too much at either end, and none in the centre of the vessel. A little attention to these matters shows the intelligent officer; but the man who points either the head, or stern of his vessel to the clouds, may depend that he is inflicting an eyesore on every seaman in the port.

The following hints may be of service to young officers appointed to emigrant ships, relative to the stowage of cargo, water, and stores, &c.

All dry goods should be stowed in the after-hold; rough goods not liable to be injured by water, should be stowed in the other parts of the ship, iron amidships, and pitch, rosin, or tar before the fore-hatchway. When all the cargo is on board and levelled as much as possible, stow the water from the beam before the main hatchway, to the beam before the fore-hatchway, the remaining portion of space forward will be wanted for coals, and, if room, for a few casks of wet provisions. Stow the beer on each side the pump-well, provisions abreast the after-hatchway, the ship's stores on one side, the emigrant stores on the other, and the casks placed alternately, first beef, then pork; the bread should be stowed right aft, blocked up to the deck; the flour and peas alternately; and the other stores as convenient, but placed together, that is, the kegs of suet by themselves, kegs of butter by themselves, and so on; by adopting this plan there will be no difficulty in finding anything when wanted. One side of the main hatchway will be required for the sails (if there is no sail-room) and for the new rope, as they are less liable to be injured here if a few planks are used, than they would be in the after-hold, where moving casks is of daily occurrence. The remaining portion of room in the main-hatchway will be wanted for the emigrants' baggage, and also all the spare room on the top of the water.

For want of system, many young officers whose duty it is to serve provisions out in emigrant ships, can never get through their work without much trouble. The hatchway, where provisions are issued, is too frequently a scene of riot the whole day, much to the annoyance of those whose berths are opposite. If the person whose duty it is to get a certain mess's rations neglects to be present when his turn comes to receive them, the issue is stopped, perhaps for ten minutes or a quarter of an hour, and those who are waiting their turn become clamorous; now, how much better would it be for an officer to bring a slip of paper, and as each mess omitted to come for their rations at the first call, make a memorandum of the same, then pass on to the next, and when the party who neglected to come, appears, quietly serve the rations to him, instead of allowing a noise to be made about such trifles.

A scale of provisions to be issued to each mess daily should be pasted on a bit of board, and suspended close to where the provisions are weighed.

The different articles of provisions required to be commenced upon immediately, should be ranged across the hold just abaft the beam of the after-hatchway, and not as is too frequently the case, the flour kept a dozen yards from the suet, and the raisins a similar distance from something else. A little arrangement so as to have the article always at hand, instead of having men tumbling into contlings of casks, or breaking their shins over chimes, would not only expedite the young officer's duty, but make it more pleasant.

In a small work of this kind it would be impossible to notice all the duties of an officer, the routine is only to be learned by practice and observation, and much must depend upon the man.

REQUIRING HEAVY REPAIR ABROAD.

When putting into a port abroad for repairs, the first thing to be ascertained by a shipmaster, after noting his protest, is the terms on which he can procure money, and having called a survey, he must get estimates of the probable expense attending such repairs; much after-trouble may be saved by doing so. There are so many nice little pickings to be had from a vessel that reaches a port abroad in a distressed state, and requires her cargo to be discharged, that advantageous terms may generally be made with an agent, and instead of the ruinous 25 per cent. for bottomry bond, he will be satisfied with 5 per cent. commission, and a bottomry bond effected at 10 per cent., given only as a collateral security; on the other hand, with no cargo on board, and obliged to put into a port for repairs, a shipmaster may frequently find much difficulty in procuring the necessary funds; and I would recommend him, previous to leaving England, to induce his owner, if not well known abroad, to give him a letter of credit, informing all whom it may concern that the captain is authorised to draw upon the person whose signature appears at the bottom of the letter, a certain sum if for necessary repairs done to his vessel, to enable him to proceed on the voyage. A letter of this kind carries some weight, and a shipmaster having such an authority to show will not find it difficult to get his bill accepted. Of course these observations refer to a case when the owner has no accredited agent abroad.

In cases where a loaded vessel encounters heavy weather, and puts into port for repairs, there is both general and particular average; the former is where anything has been done for the preservation of the vessel, such as cutting away spars or sails, slipping from anchors, or throwing cargo overboard; and afterwards the landing, carting, storing, and shipping of cargo, if landed to enable the ship to complete repairs. These, together with some other items, the underwriters of the cargo all contribute to make good, as well as the underwriters of the ship and freight; consequently, with a valuable cargo, there is very little loss to a shipowner when a general average occurs; but in all cases of damage through stress of weather, getting ship ashore, &c., &c., when heavy repairs for hull and spars are required, such repairs come under the denomination of particular average, and the underwriters, if the vessel is insured, pay for it, less one-third, which it is customary for the owners of the ship to bear the loss of, upon the supposition that their vessel gets a large quantity of new articles in room of old; but as there are many expenses the owner cannot recover, such as detention, &c., it may generally be calculated that the owner's loss in a particular average, amounts to one-half, or nearly so; consequently, the system is unfair for honest men, and opens a field for dishonest ones to display their ability in.

It sometimes happens that the estimate for repairs amounts to almost as much as the ship is insured for, and it is better for all parties to sell the vessel.

If there is a probability of getting a ship home, especially if the owners are uninsured, without entering largely into repairs abroad, the master should do so; for instance, suppose a ship to spring a leak on the passage home, and it is found that she makes no more water in rough than in calm weather, you put into port with a view to discover the leak, and find this cannot be effected without discharging the cargo, going into dock, or heaving the ship down; one pump constantly at work probably keeps the ship free. Now, it would be better to ship some extra hands, and proceed with the voyage; and if there is any doubt about the pumps, have an extra one or two fitted. There are generally some condemned vessel's pumps to be purchased in most ports. Lloyds' agent may probably object, but he is not infallible; and if you do what you think is right, having the opinion of a respectable merchant, and a shipmaster or two, which coincides with your own, then no insurance offices can blame you afterwards, as what you did was for the benefit of all concerned.

It sometimes happens that a ship may be dismasted, and advantage taken to ask such exorbitant prices for spars, that a man scarcely knows how to act. I have seen more than 1000*l.* asked for the mainmast of a ship of 1000 tons. Rather than go to such expense, and if unable to get a mast built, I would jury-rig the vessel; it will not probably make more than a fortnight difference in the passage home, and the ship is quite as safe.

I would recommend all young shipmasters when abroad to contract for repairs, and never be persuaded to put their vessel into any dock, without first ascertaining that the repairs cannot be done cheaper elsewhere, and always have a written agreement. In Calcutta, work contracted for I have seen done at no greater cost than it would be in England; and when there has been no contract, the expense for similar work has been treble. The

Sircars and Baboos have a peculiar aptitude for placing small items to make a bill swell to an extent that astonishes the uninitiated, and their saying, " Must cheat massa a leetle," means that they will cheat master all they are able. But the moral propensity to get all you can, is not confined to the natives of India, and it is absolutely necessary in these degenerate days, however much you may wish to do as you would be done by, to see that you are not done in any way, and the man who requires heavy repairs for his vessel should bear this in mind.

There are so many occasions when judgment is required, and it becomes necessary to deviate from established rules, that it is impossible to point out when to do so; but it is better at all times to conciliate Lloyds' agent, and endeavour to comply with his wishes; although, if your owners are likely to be severe sufferers by doing so, then some little risk may be run, and I think they will be more likely to appreciate your wish to serve them.

These hints are not intended to make men foolhardy, and run unnecessary risks with valuable property; they should get the opinion of others to back their own, when taking so much responsibility on their shoulders.

CHAPTER III.

Hints on Navigation.

LOCAL ATTRACTION.

Most seamen are aware, that independent of the variation of the compass, which all know how to allow for, there is a local attraction in almost every vessel, which is seldom taken account of in merchant-ships; and as deep-rooted prejudices are difficult to eradicate, some time must elapse before the great bulk of seamen will admit the utility of understanding either local attraction, or the laws of storms.

I will endeavour to give to seamen a practical idea of the advantages to be derived by allowing for local attraction. In the generality of vessels built of wood the local attraction is very similar, amounting to half or three-quarters of a point, when the vessel's head is East or West, and gradually decreasing to little or nothing as the vessel's head is brought North or South.

In north latitude, with the variation two points westerly, a seaman would, in working his day's work, put down course corrected as W.S.W., if the vessel had been making a west course by compass. Now, owing to local attraction (if the vessel has any) this would be wrong, for the ship has probably been going half or three-quarters of a point more to the southward, consequently, if he is in narrow waters, and a long winter's night before him, he might find himself at daylight in a very dangerous position; on the other hand, if he is steering east, the corrected course would be put down E.N.E., whereas it probably would be, if corrected for local attraction, half or three-quarters of a point more easterly; and I am convinced that many shipwrecks which occur, and are too frequently attributed to the set of the tide or current, proceed from two causes combined — viz., neglecting to have the magnetic virtue restored to compasses, and inattention to local attraction. When a ship is steering near north or south, as the local attraction ceases somewhere about these points, it is unimportant whether allowed for or not.

In the Southern Hemisphere the local attraction is the opposite way to what it is in the Northern Hemisphere, on board the same ship; for instance, if in the Northern Hemisphere the local attraction, when the ship's head is east, was found to be southerly; in the Southern Hemisphere, with the ship's head east, it would be northerly; and when steering east, with two points of westerly variation, instead of the corrected course being E.N.E., it would probably be half or three-quarters of a point more northerly. Of course, these are only rough calculations, and are merely stated to give the young mariner a correct general idea of the subject.

Every man can ascertain the local attraction on board his vessel by very simple means, and sufficiently near for most nautical purposes. Captains of vessels in the coasting trade would find great advantage by paying more attention to it, and after passing a long winter's night, anxious enough, and unable to pick up the lights expected, they would most probably as daylight appeared find themselves in a truer position with regard to their reckoning, if the local attraction had been allowed for; and to ascertain what this is, let them, any day it is almost calm and slack tide, or if a calm, lower a boat for towing the vessel's head round; then take the compass-bearing of some distant object on shore when the vessel's head is *North,* and afterwards get the vessel's head N.N.E., N.E., E.N.E., and East, and whilst in each of these positions get the bearing of the same object, and note the differences. It will now be seen (if the vessel has any local attraction) that the object on shore differs from half to nearly a point when the ship's head was East, to what it did when the ship's head was North; consequently, when you suppose your vessel is making an east course, she may be going half, or more than half a point to the southward of that course; and on every point between East and North it will be seen that there is some allowance to be made. If more convenient to alter the ship's head from North to West, then similar differences of the bearing of the object will be observed, only the opposite way.

A few trials and a little thought on this subject will be sufficient to convince any one of the necessity of applying the local attraction when steering far from the north or south points of the compass. It is no argument for a man to say, "I have been forty years on the coast, and never lost a ship yet." Good-luck will sometimes attend the most careless,—I might almost say the ignorant. I ask any man who has commanded vessels for a few years, if there have not been occasions when he has found himself in a different position to what he expected, and if so, has he not attributed it to current or the set of the tide, instead of the true cause, local attraction, and perhaps error in compass, caused by the magnetic virtue in the needle being partly expended?

A few years ago I was appointed to a vessel, and sent away in a great hurry to the eastward of the Cape. On the return passage, after rounding the Cape of Good Hope, and bowling along in the trades to St. Helena, I remarked that the course steered never agreed with the observations. At first, I attributed it to careless steering, and then I thought the variation must be more than I allowed; but I finally discovered that there was not a compass on board correct. In sailing up the Irish Channel, the attraction of the coast (most probably the Welsh coast) had such an effect upon the exhausted needles of the compasses, that I ascertained they were two points out, and I allowed this as an error all the way to Ilsa Craig, where I was boarded by a pilot, who took the ship to Greenock. In giving up charge, I told the pilot not to depend upon the compasses, as there were two points' error in them. He made no observation at the time, but on arriving in the Clyde, he remarked to me that the compasses were very much out. Now, it follows, that if I had not observed this error in the compasses the vessel would probably have been run ashore; and an accident like this occurring to a young ship-master might blast his character for life, when really very little blame could have been attached to him. The following voyage in the same ship, I found the same compasses correct: they had been on shore, and fresh magnetic power imparted to them.

I have already said that very simple means may be adopted to ascertain the local attraction, sufficiently correct for most nautical purposes; and in addition to the method already given, I will point out another. Most ships trading to the eastward of the Cape of Good Hope carry an azimuth compass, and any fine day, when almost a calm, the magnetic azimuth can be taken, with the ship's head turned half way round the compass, and the local attraction may be ascertained within a degree. These observations can be repeated three or four times in a voyage, and I feel confident it will prevent many a complaint relative to there not being sufficient attention paid to the steerage of the vessel; for however badly a ship may be steered, the course steered will not differ from the course given much more than a degree. This I have remarked frequently. The local attraction decreases as the magnetic equator is approached; consequently, it will not lead to any material error if unapplied in very low latitudes.

The more matters can be simplified in navigation the better, and as there is great danger of the local attraction being frequently applied the wrong way, I beg to suggest to the shipmaster, that when in the vicinity of land he would find it advantageous to have in a corner of his chart a compass-card, corrected for variation, and the local attraction of his vessel. This can be easily made by himself at any leisure hour, and will be found useful to refer to occasionally. For instance, suppose a ship, of which the local attraction has been ascertained, entering the English Channel on a dark winter's night: the Lizard lights are sighted, and an E.b.S. course is shaped to keep in the fair way. Now, it follows, that a man having a little corrected compass in his chart, could easily ascertain by placing the parallel ruler over the E.b.S. point, if the vessel was likely to approach the English or French coast, and alter the course accordingly. To lay down the bearing of a light by this compass would be incorrect, but any man having the local attraction for his vessel, can easily apply it to the bearing according to the course he is steering; and even if no notice is taken of the local attraction when entering the bearing of a light on the chart, it is not likely to lead to any important result; but steering E.b.S., when probably the vessel ought to go E.½S., will prevent a shipmaster from seeing the lights on the English coast, and after a long winter's night he may find himself closer to the French coast than he expected.

Errors are often made by the clearest headed men on shore, and how much more likely are they to be made by the shipmaster, frequently suffering intense anxiety, at night-time. In many charts of the English Channel, the magnetic, as well as the true points of the compass are inserted, and there are few men who have not availed themselves of it, when using the parallel ruler to shape a course, or enter the bearing of a light in their chart.

Many a fearful shipwreck would be avoided if an Inspector of shipping were appointed in the principal ports of the United Kingdom, whose duty it should be to ascertain if the compasses on board merchant ships were correct, and also get the masters to give him the bearings they may have taken of an object during the voyage, when the vessel's head was placed on different points of the compass, by which means he could give them the local attraction, or see that they understood applying it the right way themselves; however, a compass card, corrected for the variation and local attraction on every point a vessel's head could be placed, should be pasted on the charts of vessels in the home trade, and where the chart was large, so as to take in two or three different variations of the compass, then two or three of these little compass cards might be used. In time the attention of seamen would be drawn to the subject when they ascertained how correctly the courses steered agree with those given.

There are few men, perhaps, of any standing as seamen, who have not remarked that the Channel course steered in different ships they have commanded, has not always been the same; and to what cause can this be attributed, unless to local attraction, and perhaps the weakened state of the magnetic virtue in the needles of many ships' compasses? We go on blindly correcting our positions by sighting land or lights, taking no heed of the day when we are unable to see either; and knowing how frequently we have had occasion to correct the course steered, without particularly noticing the circumstance at the time, we go on, I say, suffering a world of anxiety, which a little attention to local attraction, and to ascertaining that our compasses had lost none of their magnetic virtue, would prevent.

LUNARS.

These useful observations are frequently neglected; and if young officers on moonlight nights would only practise them more, they would find many a weary hour pass usefully and pleasantly away. I have frequently as a youngster been so absorbed in working a lunar by the binnacle light, as to take no heed of the flight of time, and only brought to notice other duties by the man at the wheel remarking that he thought it must be eight bells, and then perhaps learning that I had inadvertently kept the watch half an hour longer on deck than they ought to have been. There are many who find the inverting telescope too difficult to manage, and having been told that the direct telescope is of little use in taking lunars, they abandon all hope of ever being proficients. Now this is not the case: I can take a lunar equally as well with the direct glass as the inverting one, and I think it depends in some measure upon the structure of the eye. A man who is a quick shot at a bird on the wing, would probably take a lunar more correctly with the inverting glass; but the man who requires to see the object steadily, before he can venture to shoot at it, I think is more likely to take a lunar correctly with the direct glass, than with the inverting one; but under any circumstances a good lunar sextant is requisite, a common 10*l.* sextant cannot be depended upon. In using the instrument do not grasp it too tightly.

Lunars may be used to rate chronometers, but few men will take the requisite number, or work them with the nicety required. Two or three should be taken in every long voyage, if only to guard against a gross error in the chronometer.

CHRONOMETERS.

I have known a wrong original error given with chronometers: and every man before taking his departure from land, should ascertain if the original error given is correct; even where only very indifferent sights are to be obtained, I would recommend this being done. A knowledge of an error in the daily rate cannot be discovered till you have been at sea some time, either by sighting land, or lunars. In taking sights for chronometers when getting near land, always have two separate setts taken by different parties, a sextant may be read off wrong.

The following rhyme may be of use to those whose memories are not particularly good:—

Longitude west, Greenwich time best,
Longitude east, Greenwich time least.

LATITUDE.

Sometimes only the captain of a vessel takes an observation at noon, or perhaps he leaves it to the chief officer. In the broad Atlantic, far from land, this is of little importance, but I would strongly recommend every ship-master when near land never to depend solely upon his own observation, but have an officer to be a check upon him; for although he may get the meridian altitude perfectly correct on his sextant, still an error may be made in reading off. It seems almost impossible that an error can be made in applying the declination, now that the Nautical Almanack has N.S. placed whenever a change occurs, still I would recommend, as a general rule, never to tell the declination to the officer who works the latitude, always let him find it out himself, and it will be very strange if both make a mistake.

POLAR DISTANCE.

It frequently happens that the declination is applied the wrong way to ascertain the polar distance; and if the careless navigator would always bear the following in mind, no mistake could ever occur,—"subtract the sun's declination from 90°, when the latitude and declination are of the same name." This is part of the rule given in epitomes, and if a man frequently repeats it mentally when working his observations, the remaining part of the rule will be always attended to.

SKIRTING REEFS AT NIGHT.

No man should attempt to skirt a reef at night-time, as it is quite impossible for him to judge his distance off, and if the water is deep, equally as impossible to get soundings correctly with a small lead, or sufficiently quick with a large one; one of two things should always be done, either to haul off, or anchor if the prevailing winds do not make the place dangerous. These rules will apply to all parts of the world; and if in the vicinity of reefs, along which the ship's course lies, always allow a point at night for probable error in compass, and heave the deep sea-lead every hour, till it is ascertained by the water deepening, that the course steered is taking you from the reef; and before daylight the parallel course may be resumed.

How frequently have the coral reefs off Mauritius brought vessels up when the attempt has been made to reach the anchorage after dark, whereas if the anchor had been let go in fifteen fathoms water when past Cannonnier's Point, or the vessel hauled off, and beat up to Round Island again; long before daylight she may attempt to pass through the Islands so as to be a little past Gunner's Quoin as day breaks. If the trade wind is not steady, the passage through these islands should not be attempted, as the current between Round Island and Flat Island frequently runs with great velocity, and I would recommend at such times the passage outside all the islands being chosen.

LEAVING ENGLAND.

The making of passages in sailing ships depends entirely upon chance, although too frequently ship-owners seem to think that the Captain ought to know from "whence the wind cometh, and whither it goeth." I have sometimes known extraordinary passages made by men, voyage after voyage, and then their luck, as it is called, changes. Much, of course, depends upon a fast-sailing ship; and there are some men who, if there is a right way, and a wrong way, to take at certain seasons of the year, generally choose the wrong. When leaving the Downs with a foul wind, it is better to take the night tide; this will give daylight to work the ship against the flood, and the following tide will take her round Dungeness, where there is plenty of sea room. In standing over to the French coast, it will frequently be found that the wind blows two or three points different on that coast, to what it does on the English coast; and this is quite in accordance with the theory of wind moving in circles. By noting on which coast the ship comes up or breaks off, and by working the tides, a ship may be frequently put on that tack by which no ground is lost during the flood-tide. After clearing the English Channel, the recommendation is to stand well to the westward, and give the Bay of Biscay a wide berth; with a fair wind this should be done, but, with the wind from the westward, as soon as Ushant can be cleared, stand across to the coast of Portugal, and probably the wind will be found different as you approach that coast. This is also in accordance with the theory of circular winds. The west wind shows a ship to the southward, or in the right-hand semi-circle of a body of wind moving in a circle; consequently, a ship going to the southward must eventually get away from this body of wind, as the researches of the meteorologists seem to show that it never travels to the southward of east in the northern hemisphere.

The opinions are various as to the preference to be given to the passage inside, or outside the Cape Verd Islands. It is well known that the Brazil traders, out of Liverpool, make remarkably quick passages; they always keep well to the westward in crossing the Equator; but, being very fast vessels upon a wind, they may venture to run some little risk of weathering Cape St. Roque, which it would not be prudent for duller sailing vessels to do.

It is, perhaps, of little importance, from November to May, whether the inside or outside passage of the Cape Verd Islands is chosen; but from May to November, as S.W. winds are more prevalent between the N.E. and S.E. trades than any other; by going outside the Cape Verd Islands, a vessel will run no danger of getting too near the coast of Africa, when standing to the S.E.

With a southerly wind near the Equator, as very little is to be gained by tacking, a ship may venture to cross the Line in 27° W., or even 30° W., if a smart vessel, and will generally find little danger of not weathering Cape St. Roque.

After losing the trade wind in 30° S., a ship-master who understands great circle sailing, will avail himself of this knowledge to shorten the distance, but it is not advisable to go farther south than 45°; and he must recollect, if the rotatory theory is applicable to all winds having a certain force, that a body of wind in the southern hemisphere is revolving from left to right, and in high latitudes probably travelling in an easterly direction, but this can be ascertained by projection. Consequently, with a westerly wind he will be on the northern side of a body of wind, which is moving in one enormous circle, and progressing onwards at the same time; and he would do well to watch any shift to enable him to vary his course a little, so as not to be thrown too near the centre nor too far from it.

The passages to be chosen at different seasons of the year are to be found in Sailing Directories, but the following hints respecting the Bay of Bengal may prove useful to many :—

BAY OF BENGAL.

From the middle of January to the end of May, go up the west side of the Bay, and come down the east side; during June, July, and August, go up and come down the middle of the Bay, or the eastward of the Andamans, and round by Acheen Head; in September, October, and November, go up the east side of the Bay, and come down the west side; in December to the middle of January, go up, or come down, the middle of the Bay, taking every advantage of putting the vessel on the most favourable tack when going up.

The following notice has been issued by the Government of Bengal:—"Notice is hereby given, that from and after the 15th March 1852, the Pilot Station for the south-west monsoon will be changed to the position described in the following sailing directions of the Master Attendant at this port; and that from and after the date specified, the Eastern Channel Light-vessel will show a bright red light, instead of a plain one, as at present, to distinguish it from the Gaspar Channel light, which bears from it about N.N.W., distant twenty-two miles.

"By order of the Superintendent of Marine,
"JAMES SUTHERLAND, Secretary.
"*Fort William, 6th May* 1851."

"Sailing directions for vessels requiring pilots during the S.W. monsoon, at the new station on the N.E. part of the Pilots' Ridge:—

"False Point Lighthouse is in lat. 20° 19½′ N. and long. 86° 47′ E., and a buoy is placed in 21½ fathoms on the Pilots' Ridge, in lat. 20° 49½′ N. and long. 87° 42′ E.; the buoy, therefore, bears from False Point Lighthouse N. 59° 49′ E. true, and distant 59½ miles.

"A vessel, therefore, after making the light-house at False Point (in passing which she ought not to go into less than ten fathoms) should bring it to bear about W.S.W. ten or fifteen miles distant, when she will be in eleven or twelve fathoms; then steer E.N.E., when the soundings will gradually increase to twenty-three fathoms on the eastern edge of the Pilots' Ridge. She should then regulate her course so as to keep between the Ridge and twenty-seven fathoms, when, by attention to the lead and nature of the soundings, course, and distance run from the lighthouse, it is almost impossible to avoid making the pilot vessels, as their cruizing ground is immediately to the N.E. of the light-vessel station during the S.W. monsoon, in close proximity to the buoy on the Ridge.

"The soundings to seaward of the Pilots' Ridge are in general a greenish or olive-coloured mud, with occasionally a few bits of broken shells mixed with it; whilst those on the Ridge are of a shelly sand, or minute gravel, of a reddish or dusty brown colour.

"Vessels approaching the station are earnestly warned to be careful in avoiding collision when communicating with either the light or supplying pilot vessels; and on making the former at night, they are strongly recommended to heave to, at a proper distance, till daylight, by which measure they will avoid the probability of passing the supplying pilot vessel in the darkness of the night.

"The Eastern Channel light vessel is in lat. 21° 4′ N. and long, 88° 14′ E., and therefore bears from the buoy on the Pilots' Ridge, N. 63° 26′ E. true; and distant 32½ miles.

"The Eastern Channel light-vessel burns a blue light every hour during the night, commencing at seven P.M., and a maroon (or torch) at the intermediate half hours; and her standing light, from the date above specified, be a bright red colour.

"The Pilots' Ridge light-vessel shows one plain standing light, and burns a blue light every hour, and a maroon at the intermediate half-hours, and also fires a gun on sighting any vessel.

"During the N.E. monsoon, the cruizing ground where ships will have to seek for pilots, will be as heretofore on the Eastern Channel.

"H. L. THOMAS, Master Attendant.

"*Master Attendant's Office, 25th March,* 1851."

TABLE BAY, CAPE OF GOOD HOPE.

No man should attempt to beat into this Bay at night unless well acquainted with it, and then great caution is requisite, as it is impossible to see the sandy beach on the port side of the Bay going in, especially on moonlight nights. I would recommend those who wish to beat in on a fine night, and moderate south-easter blowing, to look at their watch every time they tack; by this means they will know when the first cast of the lead is required, after tacking to the port shore, and they should always depend upon themselves for the soundings; only two or three casts will be required, and heaving the lead is so little practised now-a-days as one of the essentials in seamanship, that a man may get into the chains who has not the slightest idea when the lead touches the bottom, and yet all sailors profess to understand it. When tacking to the opposite shore, the lights are a sufficient guide; and it is best to anchor in seven or eight fathoms water. If the vessel only requires refreshments, this is quite near enough; and if there is cargo to be discharged, she will want daylight to get into a proper anchorage.

The recommendation to the ship-master to get a cast or two of the lead himself, or see that somebody in whom he has the greatest confidence gives him the depth of water, will not be considered out of place here, when it is stated that several large ships have been put on shore; and two men, one in each channel, giving seven fathoms at the time. Shipping property is so precarious, and liable from inattention or carelessness to so many accidents, that there are some occasions when a careful ship-master cannot trust any one but himself.

When bound to Table Bay, the land about Cape Point should be made; the current sometimes runs very strong to the N.W., and ships are frequently swept past the port, and find great difficulty in beating up again; if so unfortunate as to have this happen, stand well out from the land, and very little, if any current will be felt.

RETURNING TO ENGLAND.

Hints for going up or coming down the Bay of Bengal in the different months of the year have already been given, and, as this little work is not intended for a Directory, I can only offer a few suggestions, gained from some experience, which younger men may avail themselves of.

In the India Directory it is recommended, after getting down the Bay of Bengal and crossing the Equator, to stand well away to the southward, giving Mauritius a wide berth, so as to avoid the hurricanes generally considered so prevalent about Rodrigue, Mauritius, and Bourbon; but with our present knowledge of these terrestrial meteors, this is unnecessary, as it is ascertained that they are just as frequent in 10° S. or 15° S., and it seems quite impossible to shape a course with a view to get more rapidly away from their influence; they have frequently extended beyond 30° S., and ships that have been thought too far to the southward for the hurricane to reach them, have been thrown on their beam-ends, and more or less dismasted; consequently, after getting into the S.E. trade, a great circle-course should be shaped to give Madagascar a berth of one or two hundred miles, and sight the coast of Africa to the eastward of Algoa Bay: a current will be found here frequently running with tremendous velocity to S.W., and afterwards W.S.W. It is about here that ships encountering heavy gales from the westward meet with so much damage; the current running contrary to the wind causes a most irregular and dangerous sea, and I would recommend a ship being kept outside the edge of soundings, the current is much stronger, and, in the event of bad weather coming on, by standing to the southward she will soon be away from the influence of the current, and find a more regular sea; in fact, at a distance of some two or three degrees to the southward of the edge of soundings, there is frequently a counter-current, although with nothing like the same velocity as near Agulhas Bank, and outward-bounders should bear this in mind.

After rounding the Cape of Good Hope, very violent weather is seldom experienced, and going through the S.E. trades is the most delightful part of the voyage. In crossing the Equator many men do so in 20° W., and carrying the S.E. trade into 8° or 10° N. are buoyed up with the hope of making a quick passage home, but the vicinity of the Cape Verd Islands and Africa soon undeceives them, and they find numerous calms before getting the N.E. trade. Now I would recommend the Equator being crossed in about 25° W., when the sun has much northern declination; the N.E. trade will soon be found, and blowing frequently so far from the eastward, that the ship crossing in 25° W. will, when near the northern limit of the N.E. trade, be almost as far to the eastward as the vessel that crossed the Line in 20° W.

ENTERING THE ENGLISH CHANNEL.

In winter time, coming off a long voyage, entering the English Channel is frequently attended with a great deal of anxiety to the ship-master, when he is unable to procure any observations, and there are some who get perfectly bewildered, and having imagined their ship in all possible positions, they end by being made aware that they have not the slightest conception of where their vessel is;—perhaps the following hints may prove useful to many. When unable to ascertain the position of the vessel by astronomical observations, fall back to the dead reckoning, which should always be kept, on approaching land, as correctly as possible; the log-line ought to be carefully examined at this time, and do not allow more than forty-seven feet to the knot for a 28-second glass, and be particular in ascertaining that both the 28 and 14-second glasses are correct each way. In working up the dead reckoning allow for *local attraction;* this is most important, as, running to the eastward, it will frequently in some vessels amount to three-quarters of a point, and in a run of 300 miles this would give an error of more than forty miles in the latitude; a careful dead reckoning, and local attraction allowed for, will probably, in a run of 500 miles, give a position within fifteen miles of the truth; and by endeavouring to strike soundings as soon as they are to be found, and then heaving the lead every two hours, a ship may stand boldly on, carrying such sail at night time that she can be brought to the wind immediately when requisite.

On first striking soundings at the entrance of the English Channel, it is difficult to make out by the quality of the bottom, whether you are near the French, or Irish coast; the soundings on the French coast are generally coarser; but, as progress is made to the eastward, by heaving the lead carefully the quality of the bottom will tell you if near the French or Irish coast, for near the former, only sand is to be found; but, from what is termed the fair way, across to Ireland, the bottom is mostly sand and oaze. As the Scilly Islands are approached, if to the northward of them, mud is found; in a parallel direction, sand and oaze; and if to the southward of those Islands, sand and shells, or gravel. At the same time, it must be admitted that the soundings are not a sure guide, and men who can place no reliance on their dead reckoning, having frequently seen it differ twenty or thirty miles in a day's run, are apt to allow the finger to wander 100 miles from the position their vessel is in, if they find similar soundings to those they have got, and say to themselves mentally, We may be here! It is impossible to avoid feeling great anxiety at such times, but heaving the lead every two hours by night, and four hours by day, so as to trace the line of soundings on the chart, will generally, as Scilly is approached, point out if to the northward, or southward of those Islands; and when the water shoals under sixty fathoms, if a dirty night, haul upon a wind, either to the northward or southward,—supposing the ship to have been running with a westerly wind previously;—if it is presumed the ship may be twenty miles on either side of Scilly, by standing to the southward the depth of water will increase; but, standing to the northward, the same depth, or very little difference will be observed.

With respect to Rennell's current, I have never experienced it yet; although, if approaching the English Channel after a long continuance of S.W. or S.S.W. gales, I should certainly bear it in mind if the soundings seemed to give the ship more towards the Irish coast than I expected. I consider the compass being correct, and the local attraction allowed for, of far more importance. How frequently do compasses in the binnacle differ from each other one week, and perhaps the next they are alike; and if mariners will note this circumstance occasionally, they will perceive that the greatest difference is when the ship's head is farthest from the magnetic meridian; this can only proceed from two causes,—a difference in the magnetic power, or a little more attraction at the one binnacle than at the other. Perhaps these two causes are combined; but I am inclined to think that the principal one arises for want of magnetic power in the one compass, as I have observed that by changing different compasses, two may be brought very near alike in each binnacle; consequently, it is very necessary that the compass steered by, should agree with the azimuth compass on all points, when that compass is used to ascertain the local attraction; and before making land, all the compasses in the ship should be examined by this one, and only those used which agree with it. By this means, the course steered may be depended upon as being more correct than it otherwise would be.

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